EARTH AND PLANETARY SCIENCE LETTERS
Volume 83, number 1/4, May 1987

CONTENTS

(Abstracted/indexed in: Bulletin Signalétique, Chemical Abstracts, Current Contents, Mineralogical Abstracts and AGI's Bibliography and Index of Geology)

Bolide impacts, acid rain, and biospheric traumas at the Cretaceous-Tertiary boundary
R.G. Prinn and B. Fegley, Jr. 1

C/^{3}He in volatile fluxes from the solid Earth: implications for carbon geodynamics
B. Marty and A. Jambon 16

Numerical models for diagenesis and the Neogene Sr isotopic evolution of seawater from DSDP Site 590B
F.M. Richter and D.J. DePaolo 27

O, S, Sr, and Pb isotope variations in volcanic rocks from the Northern Mariana Islands: implications for crustal recycling in intra-oceanic arcs
J.D. Woodhead, R.S. Harmon and D.G. Fraser 39

Two-phase separation and fracturing in mid-ocean ridge gabbros at temperatures greater than 700°C
D.S. Kelley and J.R. Delaney 53

Evolution of oceanic gabbros from DSDP Leg 82: influence of the fluid phase on metamorphic crystallizations
C. Mével 67

Oxygen isotopes in coexisting garnets, clinopyroxenes and phlogopites of Roberts Victor eclogites: implications for petrogenesis and mantle metasomatism
J.S. Ongley, A.R. Basu and T.K. Kyser 80

Evolution of continental crust in southern Africa
N.B.W. Harris, C.J. Hawkesworth, P. Van Calsteren and F. McDermott 85

The cooling history of Silurian to Cretaceous alkaline ring complexes, south Eastern Desert, Egypt, as revealed by fission-track analysis
G.I. Omar, B.P. Kohn, T.M. Lutz and H. Faul 94

Heat flow and depth versus age for the Mesozoic northwest Atlantic Ocean: results from the Sohm abyssal plain and implications for the Bermuda Rise
K.E. Louden, D.O. Wallace and R.C. Courtney 109

Surface deformation, gravity and the geoid from a three-dimensional convection model at low Rayleigh numbers
C.H. Craig and D. McKenzie 123

Simple 2-D models for melt extraction at mid-ocean ridges and island arcs
M. Spiegelman and D. McKenzie 137

Secular cooling of the Earth as a source of intraplate stress
S.C. Solomon 153

Thrust sheet motion and earthquake mechanisms
J.Cl. De Bremaecker 159

An equivalent layer magnetization model for Australia based on Magsat data
M.A. Mayhew and B.D. Johnson 167

The relationship between seismic velocity and heat production—critical comments
L. Rybach and G. Buntebarth 175

The relationship between seismic velocity and heat production—reply
D.M. Fountain 178

Project Kaiko 181

Author Index Volume 83 377